

SEQUENCE LISTING

<110> Perera, Ranjan  
Rice, Stephen  
Eagleton, Clare

<120> Compositions and Methods for the  
Modification of Gene Expression

<130> 11000.1036c5

<150> U.S. No. 10/291,447  
<151> 2002-11-08

<150> U.S. No. 60/425,087  
<151> 2002-11-08

<150> U.S. No. 10/137,036  
<151> 2002-04-30

<150> U.S. No. 09/724,624  
<151> 2000-11-28

<150> U.S. No. 09/598,401  
<151> 2000-06-20

<150> PCT/NZ00/00018  
<151> 2000-02-24

<150> U.S. No. 60/146,591  
<151> 1999-07-30

<150> U.S. Patent No. 09/276,599  
<151> 1999-03-25

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Met Gln Ile Phe Val Lys Thr Leu Thr  
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 Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser Asp Thr Ile Asp Asn  
 10 15 20 25

ggt aaa gct aag atc cag gac aag gaa ggg att ccc ccc gac cag cag 2187  
 Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile Pro Pro Asp Gln Gln  
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cgt ctg atc ttc gca gga aag cag ctt gag gac ggc cga acc ctt gcc 2235  
 Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp Gly Arg Thr Leu Ala  
 45 50 55

gat tac aac atc cag aaa gaa tct acc ctc cac ctt gtt ctc cgt ttg 2283  
 Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His Leu Val Leu Arg Leu

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Thr Leu Glu Val Glu Ser Ser Asp Thr Ile Asp Asn Val Lys Ala Lys			
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atc cag gac aag gaa gga att ccc cct gac cag cag agg ctt atc ttc			2427
Ile Gln Asp Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe			
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Gln Lys Glu Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Met			
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caa atc ttt gtg aaa acc ctt aca ggt aaa acc att act ctg gaa gtg			2571
Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu Val			
155	160	165	
gaa agc tcg gac acc att gac aat gtg aag gct aag atc cag gac aag			2619
Glu Ser Ser Asp Thr Ile Asp Asn Val Lys Ala Lys Ile Gln Asp Lys			
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gag gga att cca cct gac cag cag agg ttg atc ttt gcc ggt aag cag			2667
Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys Gln			
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Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Phe			
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aactacatta	cttcctaaat	catatcaaaa	ttgtataaat	atatccactc	aaaggagtct	180
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ttatcaatgg	aaaaatccat	ctaccaaact	tactttcaag	aaaatccaag	gattatagag	300
taaaaaatct	atgtattatt	aagtcaaaaa	gaaaaccaaa	gtgaacaaat	attgatgtac	360
aagtttgaga	ggataagaca	ttggaatcgt	ctaaccagga	ggcggaggaa	ttccctagac	420
agttaaaagt	ggcgggaatc	ccggtaaaaa	agattaaaaat	ttttttgtag	agggagtgtc	480
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taaatataac	tagaattttc	ataactttca	aagcaactcc	tcccctaacc	gtaaaacttt	660

tcctacttta	ccgttaatta	cattccttaa	gagtagataa	agaaataaag	taaataaaaag	720
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tttacttaaa	tggcataatg	acatatcgga	gatccctcga	acgagaatct	tttatctccc	840
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gggagaaggg	tctcatccaa	cgctattaaa	tactgcctt	caccgcgtta	cttctcatct	1140
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 <222> (350) ... (356)

<221> CAAT\_signal  
 <222> (326) ... (333)

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aataactaggc	catatgagct acacaaattt caaaagtatc ttacacttat tacgcacccg 240	
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<221> TATA\_signal  
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atagaaacaa	ccagcaaagt	tactagcagg	aaatccaact	aggtatcatg	aagactacca	180
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ctacat						246

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 <222> (471) ... (477)

<221> CAAT\_signal  
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aacaattcca	ggccggcgtt	cgagacaatg	tactgcacag	gaaaatccaa	tataaaaaggc	480
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gaaatgaatt	gggaagtcca	tcgacaatgg	cagctcaact	caatgatcct	cagggtataag	180
catttttttg	gcagctctgg	tcattgtgtc	ttcaactttt	agatgagagc	aaatcaaatt	240
gactctaata	ccggttatgt	gatgagtga	tcatttgctt	ttagtagctt	taatttatgc	300
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tattttaatgt	caatgtattt	gaaactatct	tgtctcataa	ctttcttgaa	gaatacaatg	540
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 <213> Eucalyptus grandis

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 aatcaaattg actctaatac cagttatgtg atgagtgaat catttgcttt tagtagcttt 180  
 aatttatgcc cccatcttag ttgggtataa aggttcagag tgcgaagatt acatctatct 240  
 tggttcttgc aggacacagg gattcatgct agacacatca gcagtgtttc tacgttggat 300  
 agtggatgt acttagctac tataaaggaa attttgatag atatgtttga tatgggtgctt 360  
 gtacagatct atttaatgcc aatgtatttg aaactatctt gtctcataac tttcttgaag 420  
 aatacaatga tgagactggg aaccctatct ggaagaatag agtggagagc tggaaggaca 480

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 tcggctcttc tcctggactt ccatgccga taaggcgccg caactctctc tctctctctc 180  
 ttttctctc acatctctct gcctgttcat gtgcgctgca agtgaagatt cgtcggagca 240  
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 tcggctcctc tcctggactt ccatgccga taaaggccgc caactctctc tcttttctc 180  
 tcacatctct ctgcctgttc atgtgcctg caagtgaaga ttctcggag caagaaggac 240  
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<400> 11

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cctggacttc	catgcccgat	aagggccgcc	aactctctct	ctctctctct	ttttctctca	180
catctctctg	cctgttcatt	tgcctgcaa	gtgaagattc	gtcggagcaa	gaaggacgaa	240
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gtatgatctt	ggagttgttg	gtgcaaattt	gcaagctgac	gatggcccct	cagggaaatt	180
aaggcgccaa	cccagattgc	aaagagcaca	aagagcacga	tccaaccttt	ccttaacaag	240
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aactccgtat	ttctctcact	tccataaacc	cctgattaat	ttggtgggaa	agcgacagcc	360
aaccacaaaa	aggtcagatg	tcatcccacg	agagagagag	agagagagag	agagagagag	420
agagttttct	ctctatattc	tggttcaccg	gttgagatca	atggcatgcg	tgacgaatgt	480
acatattggt	gtagggtcca	atattttgcg	ggaggggttg	tgaaccgcaa	agttcctata	540
tatcgaacct	ccaccaccat	acctcacttc	aatccccacc	atttatccgt	tttatttcct	600
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<210> 13

<211> 336

<212> DNA

<213> Pinus radiata

<400> 13

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atttctcact	ctaccactcc	aacttccttc	aatgctgtg	agtttttggt	gtaattgccc	180
cgtctattta	taatcgagc	agcactcgtc	atataaagac	ccgtgtgtgt	gaacaacaac	240
caagtgattt	gaattggaaa	tgaagagcga	gaatggcggt	gtcatgaccg	ggagcaacca	300
gcccgggccg	tcgaccacgc	gtgccctata	gtaatc			336

<210> 14

<211> 763

<212> DNA

<213> Pinus radiata

<400> 14

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aaaaaagaga	gattcccaat	atattttctca	actcccttca	aatgatttct	cactctacca	300
ctccaactcc	cttcaaata	tttctcactc	taccactcca	acttccttca	aatgctgtga	360
gtttttgttg	taattgcccc	gtctatttat	aatcgagca	gactcgtca	tataaagacc	420
cgtgcgtgtg	aacaacaatg	gcggtgtctt	gactgggagc	aaccgcataa	agaaagtggg	480
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acctcccagc	ttgacccgag	aatggcggtg	tcttgaccgc	gtaaagaaag	tggtcttctg	600
tacccgactt	gacccgaaaa	aagaggaaac	gttgaaacgag	acaatctctg	ggaacttcat	660
cgaaatgaac	ctcacgactt	gactctttcg	attgtactgt	tttcattgtt	cccgcgtaaa	720



acgaccagcc cgggccgtcg accacgcgtg ccctatagta atc 763

<210> 15  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 15  
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<210> 16  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 16  
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<210> 17  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 17  
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<210> 18  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 18  
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<210> 19

<211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 19  
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<210> 20  
 <211> 363  
 <212> DNA  
 <213> *Eucalyptus grandis*

<400> 20  
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 attgtgaaat tcacgataga gctaacaaaa ataaaggtag ttggtgggtt aaccagttta 180  
 aaaaagaaca ataatttgaa gagaggagag agagagagag gagggggaga gcatttcgat 240  
 aaattcacta gaaaaaatgc gtgttttagt ataaatgaga gtggaaatag ggccatctag 300  
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 ctt 363

<210> 21  
 <211> 839  
 <212> DNA  
 <213> *Pinus radiata*

<220>  
 <221> misc\_feature  
 <222> (1)...(839)  
 <223> n = A,T,C or G

<400> 21  
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 gttatttttc tcgactatgg ctgacattac tagggctttc gtgctttcat ctgtgttttc 180  
 ttcccttaat aggtctgtct ctctggaata tttaattttc gtatgtaagt tatgagtagt 240  
 cgctgtttgt aataggctct tgtctgtaaa ggtttcagca ggtgtttgctg ttttattgctg 300  
 tcatgtgttt cagaaggcct ttgcagatta ttgcgttgta ctttaatat ttgtctccaa 360  
 ccttggtata gtttccctcc tttgatctca caggaaccct ttcttctttg agcattttct 420  
 tgtggcgctc tgtagtaata ttttaatttt gggcccggt tctgagggtta ggtgattatt 480  
 cncagtgatg tgctttccct ataaggtcct ctatgtgtaa gctgttaggg tttgtgcgtt 540  
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 ttttctaatt cgtggattgc tggtgccata ttttatttct attgcaactg tattttaggg 660  
 tgtctctttc tttttgattt cttgttaata tttgtgttca ggttgtaact atgggttgct 720  
 aggggtgtctg ccctcttctt ttgtgcttct ttcgcagaat ctgtccgttg gtctgtattt 780  
 gggatgatgaa ttatttatct cttgaagtat ctgtctaatt agcttgtgat gatgtgcag 839

<210> 22  
 <211> 881  
 <212> DNA  
 <213> *Eucalyptus grandis*

<400> 22  
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 aaaacaaacg cctcttgatt tcctcaaacc ccaaaccgaa tccctcgtca aggggcaagg 180  
 cttttgggtc cgcggcccca cggatcgctc gttcccgctc cgccacgtcg cgtcgcagcg 240  
 tgtcgagcaa acagaggggt ccgagcgact ataaaatccc gacgccatcg acaccacagt 300  
 ccatcgaaaa ccttggttcaa ttcccaagtg aaagtgaagta actgtgaacg aagagttgaa 360  
 ctttgcatct cggcgtgtgg attcaagagg aagcagcaaa gtggaaatgg acaactccaa 420  
 gatgggcttc aatgcagggc aggccaaggg ccagactcag gagaagagca accagatgat 480  
 ggataaggca tccaacactg ctcaatctgc aagggtattcc atgcaagaga ctggtcagca 540  
 gatgaaggcc aaagcccagg gtgctgctga tgcagtgaag aatgccaccg ggatgaacaa 600

atgaagagct	caagacatga	atgaataaat	aattaagctc	tggttatcat	ttgcttttcc	660
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tccttagttc	tttttgtttc	ttggttgttc	catgaagaga	gcaactctct	gtgtttgaga	780
gtactcatct	cgcttcataa	ggctctcagta	tgtagttgcc	tttcgagaat	gttatgttct	840
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<210> 23

<211> 350

<212> DNA

<213> Eucalyptus grandis

<400> 23

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accataatat	attcaacgtg	atgcttaaac	tttaatcgag	tatgcaatgt	agtccataat	180
atattcaata	tgatccttca	atccaattga	agtgtgcaat	gtggtcgcta	gattttttta	240
tgtattcaac	ttagtcttta	agctaccaac	cttccaataa	tttatgtttt	agaaataata	300
tcgaacatct	tttatattat	tcaaggaata	aaacgaacat	gcatcaaaaag		350

<210> 24

<211> 49

<212> DNA

<213> Eucalyptus grandis

<400> 24

actatagggc	acgcgtgggtc	gacggccccgg	gctgggtactt	tttttttct		49
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<210> 25

<211> 909

<212> DNA

<213> Eucalyptus grandis

<400> 25

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tatgatgctg	atgtgatagg	cagatgaatg	gcagttgagc	taagttaaag	ccctcataca	180
tagatcagag	caggaggagt	agtatatata	ggcatcttgg	caagtcacct	aaagagcggc	240
ttcgtgtatt	cccacatatt	cctctctcgt	tagaacgttc	agaaatgggt	ggccctttga	300
ctcttgatgc	agaggttgag	gttaagtctc	ctgcagacaa	gttctgggtg	agcgtgagag	360
actccaccaa	actgttccca	aagatcttcc	cggaccagta	caagaatatt	gaagtccttg	420
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taattcctaa	aggagacgga	agcttggtga	aatggtcgtg	tgggtttgag	aaggcaagcg	660
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atgagttcat	cctcaaggca	tagatgccgc	caatcgtcta	tccggatttg	cactaaatat	780
caataaaaata	atgcggagct	ggactccgca	cttctatatg	catctagtat	gagagtcccc	840
tgctgtctct	gtttgtattc	acttgaaggg	ttttctatta	agctctcttt	actgcctccg	900
aaaaaaaaa						909

<210> 26

<211> 430

<212> DNA

<213> Eucalyptus grandis

<400> 26

tggagcttga	gatagatcga	ccgagagatc	ccagcggaaa	tagaagattt	cctgatacca	60
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tcgaccccttc	ttctccaatg	gctgcgaatt	tcgtcattcc	gacccaaatg	aaggcttggg	120
tgtaccgtga	gcacggaaac	gtcgccgacg	tattgggatt	ggacccggaa	ctcaaggctc	180
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gttacgatct	cgccggcggt	gtggtaaagg	tgggcccgcg	agtgaaggag	ctcaagatcg	360
gggacgaggt	atatggattt	atgtttcacg	ccaagaaaga	cgggacgctg	gctgagtacg	420
cagccgtgga						430

<210> 27

<211> 1253

<212> DNA

<213> Eucalyptus grandis

<400> 27

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accgtgagca	cggagacgtc	gccaacgtat	tgggattgga	cccggaaactc	aaggctccctg	180
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ccgcgagagt	gaaggggggt	atcaagctcc	cgggcttttc	tctaccggcc	gtgccagggt	300
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ccgtggaaga	gtcgttcttg	gctttgaagc	ccaagaagct	gcgtttcggg	gaggctgctt	480
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gcaagtcctt	cctcgtctta	ggtgggtgctg	gtggcgctcg	cacactcata	atacagctag	600
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ccgtcccag	atacacaac	gagaaagaaa	taaagcgtcc	acatggatct	gccttaatca	1080
cgagtcctta	attagtagtc	gatgggtgctt	gctgtttgtc	tccgtacatt	cagcttctct	1140
ttgcatagta	gtttctacat	agtgcgtgta	gagaagcaag	tggatgtaca	agtaaaaataa	1200
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<210> 28

<211> 99

<212> DNA

<213> Eucalyptus grandis

<400> 28

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cttctccaat	ggctgcgaat	ttcgtcattc	cgacaaaa			99

<210> 29

<211> 927

<212> DNA

<213> Eucalyptus grandis

<400> 29

cgacgtcgca	tgctcccggc	cgccatgcgg	ccgcgggaat	tcgattacta	tagggcacgc	60
gtggctcgacg	gcccgggctg	gtactctcac	taattcttta	gttttccaat	ttagcccctt	120
ctgtaattgc	tcatcttctt	taccaaattc	tctaatttgg	ccggcgaagg	gctgacaagg	180
gattgggtcat	gtcaccctca	ccaaagggtg	ccgaagggtcc	ggtgacctca	gctgacggcc	240
acctacacca	aatctagctc	actagcagcc	taagcccttc	atcaactcta	gtgaaagggt	300
ttgagtattt	tttaataaaa	aatattttaa	aaatatatag	cgagagctca	ttacaaaaaa	360

attttaaaaa	aaaatctaaa	cattacttga	actcaaagt	actttataaa	gagttttttac	420
caaaggatct	tggtttcatc	atttgcacta	cacccaaaac	ccaattttcta	agttaaataca	480
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gttctataaa	atgcatgcgc	caccccgacc	cccaccacg	catcacatcc	atccagcctc	840
cacgacagac	gcataaacac	aacacacgtc	ggttagagag	agagagagag	agagagagag	900
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<210> 30

<211> 411

<212> DNA

<213> Eucalyptus grandis

<400> 30

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taccaaaggc	tgaaggatc	agaatcta	gcagcttatg	taaaagcgcg	atcaatttat	120
tgaccccgac	gaccttgact	ccatacttca	cgcctcagct	ttgtgttgga	tggctcttgac	180
ctctctcacc	ctaaaaggta	gctcaaaaga	atgagacttt	ccgtcatact	tataaaccca	240
ccaccagcct	ctttcacaac	cgacatggga	caacctcaaa	tagaattttt	aacaacaccc	300
ttgcacgctc	tttctatcca	ctttattatg	ccatcacatg	agcgttttcc	acgcgtaaat	360
cggctaccac	ccactttcac	acggcggcga	aacgagaaaa	aggtcctacc	t	411

<210> 31

<211> 178

<212> DNA

<213> Eucalyptus grandis

<400> 31

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cgattttctt	cactgagcct	cttgcttttc	ctccggaatc	tcacggcacc	ggaatgccgg	120
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<210> 32

<211> 178

<212> DNA

<213> Eucalyptus grandis

<400> 32

gtccaatgtc	ctgtcaaagg	aggaaagatg	actatggccc	cggcgccggc	ggggactgca	60
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gcagaaaccc	agtacactcg	ccaaacggag	ctaaacctga	tggccatacg	atttcttt	178

<210> 33

<211> 178

<212> DNA

<213> Eucalyptus grandis

<400> 33

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tcactgagcc	tcttgctttt	cctccggaat	ctcacggcac	cggaatgccg	gaggcaac	178

<210> 34

<211> 1274

<212> DNA

<213> Eucalyptus grandis

<400> 34

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<210> 35

<211> 795

<212> DNA

<213> Eucalyptus grandis

<400> 35

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gccaatgcc	agttctctag	caagagctcc	tctcactcct	tccccactca	atgcttctct	180
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<210> 36

<211> 1200

<212> DNA

<213> Eucalyptus grandis

<400> 36

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gcattcaaat	acgtacgccg	tactcgattc	ccattcgatt	gttcattcat	ccgcatgcaa	180

atttcataga	gataatatct	gtgcacgtcc	ttagattaag	aacaaccaa	gagtatctgg	240
tggaagtttg	aagcatgacc	accgaagtca	gatggaacaa	acaagggtgg	tgggtgggat	300
atagtggaca	aaggaacgag	aggtgaatag	gaaaaggaga	aggcaagatg	cgggagatag	360
gatttacgtg	gcgagcggcg	attgcacgca	tgggtccacc	caccctcaac	ctcaaacttt	420
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tcccccaaaa	aaacatcatc	caatccatcc	ccattctctca	tcttcaccac	aaggagtctg	540
aagctctcct	tcaccggtcc	gtcgttttct	ctcttatctt	cttcttctcc	ctcctcttct	600
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cttcaagaag	gagaaatacg	acaagaacct	tgctttatat	ggtgaactgg	caaagcagag	1140
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<210> 37

<211> 648

<212> DNA

<213> *Eucalyptus grandis*

<400> 37

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aaggtttcga	accttggaag	aggcttaaga	gatgtatcgg	tgctttaacc	attattccat	360
gttcacataa	tatttgcccc	ggttttcagg	tcaatttttg	agtagcccgg	ttcggttcta	420
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gtctaagacc	ctacccaatt	ttagaactgt	acacccttgc	tttatcccaa	aataaaattg	540
tcaattagtc	aacttttcac	acttgatgat	cgattaagta	gatggatgac	atgggtctttt	600
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<210> 38

<211> 288

<212> DNA

<213> *Eucalyptus grandis*

<400> 38

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aaggctctga	tcatcgga	gaagagcaag	gtcctgatca	tcggagagaa	gagcagggtc	180
cttatcatcg	gagaatcgaa	ttcccgcggc	cgccatggcg	gccgggagca	tgcgacgtcg	240
ggcccaattc	gccctatagt	gagtcgtatt	acaattcact	ggccgtcg		288

<210> 39

<211> 382

<212> DNA

<213> *Eucalyptus grandis*

<400> 39

acagcaatct	catctgatga	ttcttcagtt	cggagctcag	aggatacatc	atctatagct	60
gaattgagct	gtgcaatctt	ctcggcaagc	accttcctcg	ttttctgaaa	atcatcagat	120
tttaagggtga	atccatattt	cgcagatggc	catgttactg	ctacactctc	ttcacagcat	180

acatgaagga	ggtcacatag	caagcataca	taggacctca	tatacaaata	tgacagcaga	240
ccagcccggg	ccgtcgacca	cgcgtgccct	atagtagtag	tggggaagga	gtgagaggag	300
ctcttgatga	ggaatgtcgg	cttttcttcc	atcagttgat	gttccgggtt	cctagtcatt	360
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<210> 40

<211> 986

<212> DNA

<213> *Eucalyptus grandis*

<400> 40

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gtgctagatg	gtatagagtc	cctagttatt	atttattttt	ttgggcccga	gaagatcctg	180
atggatctat	gctgtttgat	actttcagat	ttgttttgtc	tacagctcaa	ataaattagt	240
gcttggggtt	tgatatatta	tctaactctga	tacaagtctt	tgctctggcc	aatttttgca	300
gagtttcctg	caaaacagtg	cactaaagct	tccagaggac	ctcatgccat	gccaagggc	360
accacctatg	atggaacgga	gaatcaaacc	acagactgaa	caggcgttga	aatgccccag	420
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aaatacatct	aattcattca	agtctaacaa	tcctgggtctg	gattttccta	gcttaagcac	900
agaccagaat	tcactgtttg	agaccagcca	gccacaactg	tcaagagcaa	tggcatctgc	960
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<210> 41

<211> 313

<212> DNA

<213> *Pinus radiata*

<400> 41

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tagaaaaatgg	acggcagttt	atcctttcat	ggctggacac	acagaatttg	tggagggact	180
ctccattctg	gtttatccgc	cgtttagttct	ctctgtactc	cacccttagt	tctctttgta	240
ctcgagacct	ttaatgatta	gccctgctta	tgctgtcatt	actgaactca	cttcagagc	300
cccaaaaatc	tct					313

<210> 42

<211> 713

<212> DNA

<213> *Pinus radiata*

<400> 42

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gaataacatc	ggggccttgt	tctagacaga	gatttttcac	aaataacagg	ttcgaaggta	180
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gagctcagat	gggaaaacag	ataaaaatta	tcgggtggac	cttccttcac	atgttaatta	300
tatatcaagt	gtcgccaatc	cttatgtgaa	acatttagta	aagcttcgcc	agagcatttc	360
ttataggcat	tctgtgggct	ctgttggtgt	ggttggaagt	actccttta	gggaggtatc	420
tgaatatttg	caacagaagt	cagttaaaca	agtgggtgac	tgtctgtttg	tacaagatgt	480
tactggcata	cctgtgggct	tgatagagac	ttccaggcgc	attgtgcatg	taaatacattt	540



ggtgatgcag	aagctagccg	gagtagagtc	tatagagccc	actgaagcaa	ttggtgtaat	600
caagcttcct	agcagcttct	acaacttgga	atctcttgaa	attcactcta	gttcccagat	660
atggtgctcg	tcgccacatc	gtctgcttgt	acttgatggc	attcaggatc	ctg	713

<210> 43  
 <211> 28  
 <212> DNA  
 <213> Pinus radiata

<400> 43	ccacctcaca tcaataaaatt ttatacga	28
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<210> 44  
 <211> 35  
 <212> DNA  
 <213> Pinus radiata

<400> 44	gctgtttcat tggggtcata gctacgtggt gctga	35
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<210> 45  
 <211> 1729  
 <212> DNA  
 <213> Pinus radiata

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	tctgtaatta cgaatttagg gtttcctctg tcaatatctg gtagtgacaa acaaggttta	180
	atggcagcct tagcaacaac tgaagtttgt gatacatatc cacgccttgt ggagaatggg	240
	gagcttcgtg tcttgcaacc aattttccag atatatggtc gacgtcgagc tttctctgga	300
	cctatagtta cactgaaggt ctttgaggac aatgtccttt tgcgggaatt ccttgaggag	360
	agaggtaatg gaagagtttt ggtagttgat ggaggaggaa gccttagatg tgccatactg	420
	ggggggcaatg tagttgtatc tgcccaaaac aatggttggg ctggaataat tgtcactggc	480
	tgcataaggg acgttgatga aataaacaga tgtgacattg gtataagagc actgacatct	540
	aaccactga aggccaacaa gaaggggtgtg ggtgaaaaac atgcgcttat ttacattgct	600
	ggtagccgca ttcttcgggg ggaatgggtg tatgctgaca gtgatggat tcttgtttca	660
	cagcaagagt tatcactgtg agataataaa attcataagt ttcagattgt gactttcatg	720
	tcctgtggaa catatatttg actcgagtta gattctaata ggattaattg atagattctg	780
	aaaattgagg aatatctctg gtcataaaaa tcttcttctc atgtgatctt ttatgctcag	840
	ctttgagtac aggatgataa gaagtttgtg catgtttgtc taaaggttta gcaagtatta	900
	tcggaccatc ataagagata gattatggaa ctccaggact tgctattttt aatccaaaat	960
	aacatttatt ctttgtgttt ttgccaaatt aacttttatt tcccttggca ccactagtga	1020
	tttgcaatat ccagttgctg agaacataga agtgggcaac ggtgagagtt gcaacagtat	1080
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	ggaatctagt tgacaacata gttaaagttag gcatgggtgct actgtatcga tacatcttca	1200
	taaacagaaa aatatgaaca agctctaagt atgggagaaa ctccagcttg gtgttttgat	1260
	taagcatcca tattcacacc taaaagggtta caagttccaa aataaaaaatt ccaatgaatt	1320
	tagccaatct aatcagacct tataagaaat acactaggca tctggggatc aaaatccagt	1380
	agtttagaaa gtagttgtaa ataaccacga gacaaaaatc tcaatgatag cttgcttggg	1440
	tcataggttt gataataatt gaaaacatag ttgaaaggag aatcctagca atggctagct	1500
	tgaataatag atgtacagca aaattacagt agttgagaac aaagatggaa ggataatccc	1560
	aacgatagct agcttggaac gtaggatgat tacatcaaaa tcatagcagt tgagaacata	1620
	gttggaagga gaatccttat gatggctacg ttggataata ggctgtgatta tcgtaggtag	1680
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<210> 46

<211> 1038  
 <212> DNA  
 <213> Pinus radiata

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 tcattcatta tataagatca gattcgtatg atatacaggc aaccatagaa acaaccagca 180  
 aagttactag caggaaatcc aactaggtat catgaagact accaacgcag gctcgataat 240  
 gttgggtgctc attatttttg ggtgctgttt cattgggggc atagctacat cttttgattt 300  
 ctattacttc gttcaacagt ggcctggttc atactgcgat actcgtagag gatgctgtta 360  
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 gaccggtaaa tggccacagt tctgtggttc ctccgaagaa ttcgactact caaagatctc 480  
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 gcattcatalc tttgagaagg ctctctcctt gagacaaaat atagacattc ttggggctct 660  
 taaaactgca ggtattaaac ccgatggaag ccaatacagt ttgagcgata tcaaggaagc 720  
 cattaataaa aacactgggc agctcccagg aatcgattgc aacacgagcg cagagggaga 780  
 gcatcaacta tatcaggtgt atgtgtgtgt tgataaatcc gatgcttcca ctgttattga 840  
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 ggatcaggag gaccgagatg gttacacaga aggaatgtac gagctgtaga tctggacaaa 960  
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 taaaaaaaaa aaaaaaaaaa 1038

<210> 47  
 <211> 91  
 <212> DNA  
 <213> Pinus radiata

<400> 47  
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 tcctccgaag aattcgatat caagcttata g 91

<210> 48  
 <211> 91  
 <212> DNA  
 <213> Pinus radiata

<400> 48  
 gctttttcatc cacactgggtg cctcattcat tatataagat cagattcgtg tgatatacag 60  
 gcaaccatag aaacaaccgg caagttact a 91

<210> 49  
 <211> 809  
 <212> DNA  
 <213> Pinus radiata

<400> 49  
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 catgaaaacc gattagggta ttgcaaatta gggcattgcc attcaaataa ttctcagatg 120  
 aaagattctc tctaacaatt acaaatgatt atttttttcc atgagtgttg catgttcgaa 180  
 cggctctgcc agtctgtgag agagcataga gaaccctccc tgcccaattt gttagagcat 240  
 agagaaccct actgcatgag tagtaagaaa aatattcggg ctcaattcgg caaagaccac 300  
 ctgcaatgga tgacttcaac gacaatctca tgatagtgtt ctgatcagca ccagttcacc 360  
 tatatatattt atctaggggt tagtttgcat gtatcaatcc tctgggtgcac taggtaattc 420  
 tttcccagta tcatatatcc ttaatactgt tttgtctttt aatccatggc taccatcaga 480  
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ggccctcctt	ttccaggggg	cgaccgcggc	ctcgcaatgc	agctgcctgc	caaatgccat	780
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<210> 50

<211> 428

<212> DNA

<213> Eucalyptus grandis

<400> 50

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aaggaacagt	ggagtcctgc	tttgacaatc	tccaagggtt	tgctctcaat	ttgctctttg	180
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ctttaaaaac	tatatatcag	tgatggaact	ttatccctaa	gltggaatct	cttcgaatca	360
atgacttggt	tgcttgtaag	aaatgtttcc	ttaagataag	tggctttcct	caaaacttga	420
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<210> 51

<211> 525

<212> DNA

<213> Pinus radiata

<400> 51

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agcgcaggct	caagattgct	caaatgccat	ggacaaattg	gctccatgca	cttcagcagt	180
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cagtactggc	tgcgtctgca	agtctgtgag	agcagtgata	tcacttcctg	ctaagtgcaa	300
tctcccagcc	ataacctgct	ctggatctcg	ctgaaggctc	tctgttatgg	cgattctcag	360
atcgtggatc	tctttaagat	tttcagcaag	caagtgatag	aataaattct	cagattttga	420
gatatctata	tagcgatttt	cagtatcaga	ttgtctatag	tactcatata	tttaagtgat	480
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<210> 52

<211> 1126

<212> DNA

<213> Pinus radiata

<400> 52

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aagacatata	taaacacctg	cacctaaaag	ttataatgat	aacatgcata	caaccctaca	180
acgtacgtag	tcacatgcgg	ctagaactta	aaccctacc	acaaacatag	ccacctgcac	240
ccagaagtta	taataataac	atacatagaa	cccttacaat	aaaaaaagt	atctccaatg	300
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tgagatagaa	atataggcac	agaatgtggc	cggaggaatg	ttcgaattcg	agaatgataa	1080
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<210> 53

<211> 454

<212> DNA

<213> Pinus radiata

<400> 53

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caaatgccat	ggacaaattg	gctccatgca	cttcagcagt	gggactgtct	agcaatggag	180
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agtctgtgag	agcagtgata	tcacttcctg	ctaagtgcaa	tctcccagcc	ataacctgct	300
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tttcagcaag	tgatagaata	aattctcaga	ttttgagata	tctatatagc	gattttcagt	420
atcagattgt	ctatagtact	catatatatta	agtg			454

<210> 54

<211> 335

<212> DNA

<213> Pinus radiata

<400> 54

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catttatattc	taatgcagtt	gtttgttaat	tgaagtgcaa	atagttccaa	aatgtttaca	180
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tggtgacgtg	gcgcgaaact	gcttttcgaa	ctcatggaaa	tagtaattgt	tataatccat	300
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<210> 55

<211> 336

<212> DNA

<213> Pinus radiata

<400> 55

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acttcctaat	aactacaggg	caataatcct	tgcagactag	ggcttatcta	taagctcatg	300
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<210> 56

<211> 532

<212> DNA

<213> Pinus radiata

<400> 56

cgttcgttcc	cttccctttc	cattgttgcg	tttaagccct	ccaattttct	tttggcgctc	60
cgtttttggg	gctcccttga	agatctcctc	ttcatttcgg	gatttcctgc	cttcgcgcgcg	120
ccatttgaag	ttctttttct	gagagaagaa	tttagacatg	gctgatcgca	tgttgactcg	180
aagccacagc	cttcgcgcgcg	gtttggacga	gaccctctct	gctcacgcga	acgatattgt	240

ggccttcctt	tcaaggggtg	aagccaaggg	caaaggcatc	ttgcagcgcc	accagatttt	300
tgctgagttt	gaggccatct	ctgaggagag	cagagcaaag	cttcttgatg	gggccttttg	360
tgaagtcttc	aaatccactc	aggaagcgat	tgtgtcgcct	ccatgggttg	ctcttgctgt	420
tcgtccaagg	ccgggcgtgt	gggagcacat	ccgtgtgaac	gtccatgcgc	ttgttcttga	480
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<210> 57

<211> 3103

<212> DNA

<213> *Eucalyptus grandis*

<400> 57

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atcattttat	gaaatcgata	cactaacctt	tgtttctcct	aaacccaaag	gcattaatcc	180
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cgtgtataaa	agggcctccc	ccattcctca	tttttcacca	tcctccgttc	gttcgttccc	300
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tctttttctg	agagaagaat	ttagacatgg	ctgatcgcat	gttgactcga	agccacagcc	480
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acaccgactt	cattatcacc	agcaccttcc	aagaaattgc	tggaaagcaag	gatacagtgg	1920
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catggaaaat	atattctgag	aggctgttga	acctgactgc	cgtgtatggc	ttctggaagc	2760
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ttctttgttt	ccattccgcg	aatgtttgca	ttttgggggt	tgtacccatc	aattcagtaa	3060
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<210> 58

<211> 326

<212> DNA

<213> Eucalyptus grandis

<400> 58

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acgtgcctgc	cgtgggcccc	agtgcgggc	cccaaaagtg	taaacgaagg	aagctcccgg	120
ggatctgatt	ggccgcgacg	tccgcctctg	acgtggcacc	accgacgatt	tttttttaat	180
atcttgggtca	agtcctaatt	taactatggg	gtccagatta	gaagcttatc	cactatggat	240
taaatttaaat	caaatgggaa	ttaaattaaa	ttaaaatcat	cgtgcggagg	tgcacgagat	300
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<210> 59

<211> 311

<212> DNA

<213> Eucalyptus grandis

<400> 59

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ttccaattta	gccccctctg	taattgctca	tcttctttac	caaattctct	aatttgccg	120
gcgaagggct	gacaagggat	tggatcatgc	accctcacca	aagggtgccg	aagggtccgg	180
gacctcagct	gacggccacc	tacaccaa	ctagctcact	agcagcctaa	gcccttcctc	240
aactctagt	aaagggtttg	agtatttttt	aataaaaaat	atttaaaaaa	tatatagcga	300
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<210> 60

<211> 2096

<212> DNA

<213> Eucalyptus grandis

<400> 60

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gcacatcgcc	caaaattatt	cttcttgctg	ccataactgt	cgaattttct	cttttaggta	120
agtaaccaat	gatgcatcat	gttgacaaaa	aggctgatta	gtatgatctt	ggagtgtgtg	180
gtgcaaattt	gcaagctgac	gatggcccc	cagggaatt	aaggcgccaa	cccagattgc	240
aaagagcaca	aagagcacga	tccaaccttt	ccttaacaag	atcatcacca	gatcggccag	300
taagggtaat	attaatttaa	caaatagctc	ttgtaccggg	aactccgtat	ttctctcact	360
tccataaacc	cctgattaat	ttgggtgggaa	agcgacagcc	aaccacaaaa	aggtcagatg	420
tcatcccacg	agagagagag	agagagagag	agagagagag	agagttttct	ctctatatct	480
tgggttcaccg	gttgagatca	atggcatgcg	tgacgaatgt	acatattggg	gtagggtcca	540
atatttttgcg	ggagggttgg	tgaaccgcaa	agttcctata	tatcgaaact	ccaccaccat	600
acctcacttc	aatccccacc	atttatccgt	tttattttct	ctgctttcct	ttgctcgagt	660
ctcgcggaag	agagagaaga	gaggagagga	gagaatgggt	tcgaccggat	ccgagacca	720
gatgaccccc	acccaagtct	cggacgagga	ggcgaacctc	ttcgccatgc	agctggcgag	780
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ggccaaggcc	gggcccggcg	cgttcctctc	cccgggggaa	gtcgcgggcc	agctcccagc	900
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cgtgctcacg	tgcacctctc	gcgacctccc	cgatggcaag	gtcgagcggc	tctacggctt	1020

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cgaccgcga	ttcaacaaga	tctttaaccg	gggaatgtct	gatcactcca	ccattactat	1260
gaagaagata	ctggaaacat	acaagggtct	cgagggcctc	gagaccgtgg	tcgatgtcgg	1320
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caacttcgac	cgccccaacg	gattgaagac	gccccacccc	ttcctggtgt	caagcacgtc	1440
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catgactgga	gtgacgacca	ttgcgcgaag	ttcctcaaga	actgctacga	tgcgcttccc	1560
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gcgaccaaga	atgtgatcca	catcgactgc	atcatgttgg	cccacaaccc	aggcgggaaa	1680
gagaggacac	agaaggagtt	cgaggcattg	gccaaagggg	ccggatttca	gggcttccaa	1740
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cctctgtggt	gatgttcatg	gttcttggat	ttgaaagggtc	gtgaaggagc	cctttttctca	1860
cagttggctt	cggcatacca	agttcttctc	ataaaaggaa	acaataagaa	gcgactgtat	1920
gatggcgcaa	gtggaagtta	caagatttgt	tgttttatgt	ctataaagtt	ttgagtcttc	1980
tgcatactga	tttcacagaa	tgtgtaacga	aacggcgtat	atggatgtgc	ctgaatgatg	2040
gaaattgtga	tattctgtct	tctttttcag	taaatcactt	cgaacaaaaa	aaaaaa	2096

<210> 61

<211> 522

<212> DNA

<213> Eucalyptus grandis

<400> 61

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ccctctcgcg	gccagctgcy	agatctgccg	agtttaagcc	tcgtacatca	aaatgggtaa	120
ggagaagatt	cacatcgca	ttgtggtcat	tggccatgtc	gattctggga	agtcaaccac	180
aactggccac	ttgatataca	agctcggagg	aatcgacaag	cgtgtgattg	agagattcga	240
gaaggaagct	gctgagatga	acaagagatc	gttcaagtat	gcttgggtgc	ttgacaagct	300
caaggccgag	cgcgagcgcy	gtattacat	tgatattgcc	ttgtggaagt	tcgagaccac	360
caagtactac	tgactgtca	ttgatgtctc	tggacatcgt	gactttatta	agaatatgat	420
tactggaacc	tcccaggccg	actgtgctgt	ccttatcatt	gattccacca	ctggtggttt	480
cgaagctggt	atttccaagg	atggccagac	ccgtgaacat	gc		522

<210> 62

<211> 420

<212> DNA

<213> Eucalyptus grandis

<400> 62

tttgatacgc	taacaaacaa	aacatgtgaa	aagcttaatt	atggcaatta	tcataaatag	60
aaaaaaatta	gaaaaaaaga	gaggaaatgg	gccattattt	aaattgcaat	cgaaagattg	120
agggaattc	tgtttctcta	gtgtaaataa	gggtgtattt	aataattgag	ggatggaaat	180
agcatggtca	ctcggtaatt	atcaaggaaa	gcaagaataa	aaatggaaaa	aaaaaaaaaa	240
aaagcttgaa	gaggccaatg	tcgaaattat	gagcgcgaga	tgaggacact	cctgggaaac	300
gaaaaatggc	attcgcgggg	ggtgctatat	aaagcctcgt	gtaagggtgc	gttcctcact	360
ctcaaaccct	aatcctgccc	ttcccttctg	ctgctgctgc	tcgtcacctc	tctcctccct	420

<210> 63

<211> 65

<212> PRT

<213> Eucalyptus grandis

<400> 63

Met Asp Asn Ser Lys Met Gly Phe Asn Ala Gly Gln Ala Lys Gly Gln

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Thr	Gln	Glu	Lys	Ser	Asn	Gln	Met	Met	Asp	Lys	Ala	Ser	Asn	Thr	Ala	
			20					25					30			
Gln	Ser	Ala	Arg	Asp	Ser	Met	Gln	Glu	Thr	Gly	Gln	Gln	Met	Lys	Ala	
		35					40					45				
Lys	Ala	Gln	Gly	Ala	Ala	Asp	Ala	Val	Lys	Asn	Ala	Thr	Gly	Met	Asn	
	50					55					60					
Lys																
65																

<210> 64

<211> 152

<212> PRT

<213> Eucalyptus grandis

<400> 64

Met	Gly	Gly	Pro	Leu	Thr	Leu	Asp	Ala	Glu	Val	Glu	Val	Lys	Ser	Pro	
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Ala	Asp	Lys	Phe	Trp	Val	Ser	Val	Arg	Asp	Ser	Thr	Lys	Leu	Phe	Pro	
			20					25				30				
Lys	Ile	Phe	Pro	Asp	Gln	Tyr	Lys	Asn	Ile	Glu	Val	Leu	Glu	Gly	Asp	
		35					40					45				
Gly	Lys	Ala	Pro	Gly	Ser	Val	Arg	Leu	Phe	Thr	Tyr	Gly	Glu	Gly	Ser	
	50					55					60					
Pro	Leu	Val	Lys	Val	Ser	Lys	Glu	Lys	Ile	Asp	Gly	Val	Asp	Glu	Ala	
65					70					75					80	
Asp	Lys	Val	Val	Thr	Tyr	Ser	Val	Ile	Asp	Gly	Asp	Leu	Leu	Lys	Tyr	
				85				90						95		
Tyr	Lys	Asn	Phe	Asn	Gly	Ser	Ile	Lys	Val	Ile	Pro	Lys	Gly	Asp	Gly	
			100					105					110			
Ser	Leu	Val	Lys	Trp	Ser	Cys	Gly	Phe	Glu	Lys	Ala	Ser	Asp	Glu	Ile	
		115					120					125				
Pro	Asp	Pro	His	Val	Ile	Lys	Asp	Phe	Ala	Ile	Gln	Asn	Phe	Lys	Glu	
	130					135					140					
Leu	Asp	Glu	Phe	Ile	Leu	Lys	Ala									
145						150										

<210> 65

<211> 117

<212> PRT

<213> Eucalyptus grandis

<400> 65

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Arg	Glu	His	Gly	Asn	Val	Ala	Asp	Val	Leu	Gly	Leu	Asp	Pro	Glu	Leu	
			20					25				30				
Lys	Val	Pro	Glu	Leu	Gln	Glu	Gly	Gln	Val	Leu	Val	Lys	Val	Leu	Ala	
		35					40					45				
Ala	Ala	Leu	Asn	Pro	Val	Asp	Ala	Ala	Arg	Met	Lys	Gly	Val	Ile	Lys	
	50					55					60					
Leu	Pro	Gly	Phe	Ser	Leu	Pro	Ala	Val	Pro	Gly	Tyr	Asp	Leu	Ala	Gly	
65					70					75					80	
Val	Val	Val	Lys	Val	Gly	Arg	Glu	Val	Lys	Glu	Leu	Lys	Ile	Gly	Asp	
				85				90						95		
Glu	Val	Tyr	Gly	Phe	Met	Phe	His	Ala	Lys	Lys	Asp	Gly	Thr	Leu	Ala	
			100					105					110			



Glu Tyr Ala Ala Val  
115

<210> 66

<211> 318

<212> PRT

<213> Eucalyptus grandis

<400> 66

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Arg	Glu	His	Gly	Asp	Val	Ala	Asn	Val	Leu	Gly	Leu	Asp	Pro	Glu	Leu
			20					25					30		
Lys	Val	Pro	Glu	Leu	Gln	Glu	Gly	Gln	Val	Leu	Val	Lys	Val	Leu	Ala
		35					40					45			
Ala	Ala	Leu	Asn	Pro	Ile	Asp	Thr	Ala	Arg	Val	Lys	Gly	Val	Ile	Lys
		50				55					60				
Leu	Pro	Gly	Phe	Ser	Leu	Pro	Ala	Val	Pro	Gly	Tyr	Asp	Leu	Ala	Gly
65					70					75				80	
Val	Val	Val	Lys	Val	Gly	Arg	Glu	Val	Lys	Glu	Leu	Lys	Val	Gly	Asp
			85						90					95	
Glu	Val	Tyr	Gly	Phe	Met	Phe	His	Ala	Lys	Lys	Asp	Gly	Thr	Leu	Ala
			100					105					110		
Glu	Tyr	Ala	Ala	Val	Glu	Glu	Ser	Phe	Leu	Ala	Leu	Lys	Pro	Lys	Lys
		115					120					125			
Leu	Arg	Phe	Gly	Glu	Ala	Ala	Ser	Leu	Pro	Val	Val	Ile	Gln	Thr	Ala
		130				135					140				
Tyr	Gly	Gly	Leu	Glu	Arg	Ala	Gly	Leu	Ser	His	Gly	Lys	Ser	Leu	Leu
145					150					155				160	
Val	Leu	Gly	Gly	Ala	Gly	Gly	Val	Gly	Thr	Leu	Ile	Ile	Gln	Leu	Ala
			165						170					175	
Lys	Glu	Val	Phe	Gly	Ala	Ser	Arg	Val	Ala	Ala	Thr	Ser	Ser	Thr	Gly
			180					185				190			
Lys	Leu	Glu	Leu	Leu	Lys	Ser	Leu	Gly	Ala	Asp	Leu	Ala	Ile	Asp	Tyr
		195				200					205				
Thr	Lys	Val	Asn	Phe	Glu	Asp	Leu	Pro	Glu	Lys	Phe	Asp	Val	Val	Tyr
		210				215					220				
Asp	Thr	Val	Gly	Glu	Ile	Glu	Arg	Ala	Ala	Lys	Ala	Val	Lys	Pro	Gly
225					230					235				240	
Gly	Ser	Ile	Val	Thr	Ile	Val	Lys	Gln	Asn	Lys	Thr	Leu	Pro	Pro	Pro
			245					250						255	
Ala	Phe	Phe	Phe	Ala	Val	Thr	Ser	Asn	Arg	Ser	Thr	Leu	Glu	Lys	Leu
			260					265				270			
Lys	Pro	Phe	Leu	Glu	Ser	Gly	Lys	Val	Lys	Pro	Val	Ile	Asp	Pro	Lys
		275					280					285			
Ser	Pro	Phe	Pro	Phe	Ser	Gln	Ala	Ile	Glu	Ala	Phe	Ser	Tyr	Leu	Gln
		290				295					300				
Thr	Arg	Arg	Ala	Thr	Gly	Lys	Leu	Val	Ile	His	Pro	Val	Pro		
305					310					315					

<210> 67

<211> 156

<212> PRT

<213> Eucalyptus grandis

<400> 67

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			20					25					30				
Lys	Glu	Gly	Ile	Pro	Pro	Asp	Gln	Gln	Arg	Leu	Ile	Phe	Ala	Gly	Lys		
		35					40					45					
Gln	Leu	Glu	Asp	Gly	Arg	Thr	Leu	Ala	Asp	Tyr	Asn	Ile	Gln	Lys	Glu		
	50					55					60						
Ser	Thr	Leu	His	Leu	Val	Leu	Arg	Leu	Arg	Gly	Gly	Met	Gln	Ile	Phe		
65					70					75					80		
Val	Lys	Thr	Leu	Thr	Gly	Lys	Thr	Ile	Thr	Leu	Glu	Val	Glu	Ser	Ser		
				85					90					95			
Asp	Thr	Val	Asp	Asn	Val	Lys	Ala	Lys	Ile	Gln	Asp	Lys	Glu	Gly	Ile		
			100					105					110				
Pro	Pro	Asp	Gln	Gln	Arg	Leu	Ile	Phe	Ala	Gly	Lys	Gln	Leu	Glu	Asp		
		115					120					125					
Gly	Arg	Thr	Leu	Ala	Asp	Tyr	Asn	Ile	Gln	Lys	Glu	Ser	Thr	Leu	His		
	130					135					140						
Leu	Val	Leu	Arg	Leu	Lys	Gly	Gly	Met	Gln	Ile	Phe						
145					150					155							

<210> 68

<211> 238

<212> PRT

<213> Eucalyptus grandis

<400> 68

Met	Ala	Thr	His	Ala	Ala	Leu	Ala	Pro	Ser	Thr	Leu	Pro	Ala	Asn	Ala		
1				5					10					15			
Lys	Phe	Ser	Ser	Lys	Ser	Ser	Ser	His	Ser	Phe	Pro	Thr	Gln	Cys	Phe		
			20					25					30				
Ser	Lys	Arg	Leu	Glu	Val	Ala	Glu	Phe	Ser	Gly	Leu	Arg	Ala	Gly	Ser		
		35					40					45					
Cys	Val	Thr	Tyr	Ala	Lys	Asn	Ala	Gly	Glu	Gly	Ser	Phe	Phe	Asp	Ala		
	50					55					60						
Val	Ala	Ala	Gln	Leu	Thr	Pro	Lys	Thr	Ser	Ala	Pro	Ala	Pro	Ala	Lys		
65					70					75					80		
Gly	Glu	Thr	Val	Ala	Lys	Leu	Lys	Val	Ala	Ile	Asn	Gly	Phe	Gly	Arg		
			85						90					95			
Ile	Gly	Arg	Asn	Phe	Leu	Arg	Cys	Trp	His	Gly	Arg	Lys	Asn	Ser	Pro		
			100					105					110				
Leu	Asp	Val	Ile	Val	Val	Asn	Asp	Ser	Gly	Gly	Val	Lys	Asn	Ala	Ser		
		115					120					125					
His	Leu	Leu	Lys	Tyr	Asp	Ser	Met	Leu	Gly	Thr	Phe	Lys	Ala	Asp	Val		
	130					135					140						
Lys	Ile	Val	Asp	Asn	Glu	Thr	Ile	Ser	Val	Asp	Gly	Lys	Pro	Val	Lys		
145					150					155					160		
Val	Val	Ser	Asn	Arg	Asp	Pro	Leu	Lys	Leu	Pro	Trp	Ala	Glu	Leu	Gly		
			165						170					175			
Ile	Asp	Ile	Val	Ile	Glu	Gly	Thr	Gly	Val	Phe	Val	Asp	Gly	Pro	Gly		
			180					185					190				
Ala	Gly	Lys	His	Ile	Gln	Ala	Gly	Ala	Lys	Lys	Val	Ile	Ile	Thr	Ala		
		195					200					205					
Pro	Ala	Lys	Gly	Ala	Asp	Ile	Pro	Thr	Tyr	Val	Tyr	Gly	Val	Asn	Glu		
	210					215					220						
Thr	Asp	Tyr	Ser	His	Glu	Val	Ala	Asn	Ile	Ile	Ser	Asn	Ala				
225					230					235							

<210> 69  
 <211> 168  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 69

Met	Ser	Thr	Ser	Pro	Val	Ser	Ser	Trp	Cys	Ala	Thr	Ser	Phe	Ser	Pro
1				5					10					15	
Ala	His	Ser	Ser	Leu	Lys	Arg	Ala	Ala	Gly	Leu	Arg	Pro	Ser	Leu	Ser
			20					25					30		
Ala	Arg	Leu	Gly	Pro	Ser	Ser	Ser	Ser	Ser	Ser	Val	Ser	Pro	Pro	Thr
		35					40					45			
Leu	Ile	Arg	Asn	Glu	Pro	Val	Phe	Ala	Ala	Pro	Ala	Pro	Val	Ile	Asn
	50					55				60					
Pro	Thr	Trp	Thr	Glu	Glu	Met	Gly	Lys	Asp	Tyr	Asp	Glu	Ala	Ile	Glu
65				70					75					80	
Ala	Leu	Lys	Lys	Leu	Leu	Ser	Glu	Lys	Gly	Asp	Leu	Lys	Ala	Thr	Ala
				85					90					95	
Ala	Ala	Lys	Val	Glu	Gln	Ile	Thr	Ala	Glu	Leu	Gln	Thr	Ala	Ser	Pro
			100					105					110		
Asp	Ile	Lys	Pro	Ser	Ser	Ser	Val	Asp	Arg	Ile	Lys	Thr	Gly	Phe	Thr
		115					120					125			
Phe	Phe	Lys	Lys	Glu	Lys	Tyr	Asp	Lys	Asn	Pro	Ala	Leu	Tyr	Gly	Glu
	130					135					140				
Leu	Ala	Lys	Gln	Ser	Pro	Lys	Phe	Met	Val	Phe	Ala	Cys	Ser	Asp	Ser
145					150					155					160
Arg	Val	Cys	Pro	Ser	His	Val	Leu								
				165											

<210> 70  
 <211> 214  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 70

Met	Pro	Cys	Pro	Arg	Ala	Pro	Pro	Met	Met	Glu	Arg	Arg	Ile	Lys	Pro
1				5					10					15	
Gln	Thr	Glu	Gln	Ala	Leu	Lys	Cys	Pro	Arg	Cys	Asp	Ser	Thr	Asn	Thr
			20					25					30		
Lys	Phe	Cys	Tyr	Tyr	Asn	Asn	Tyr	Asn	Leu	Ser	Gln	Pro	Arg	His	Phe
		35					40					45			
Cys	Lys	Thr	Cys	Arg	Arg	Tyr	Trp	Thr	Lys	Gly	Gly	Ala	Leu	Arg	Asn
	50					55				60					
Val	Pro	Val	Gly	Gly	Gly	Cys	Arg	Lys	Asn	Lys	Arg	Ala	Lys	Arg	Ala
65				70					75					80	
Val	Asp	His	Pro	Val	Ser	Ala	Gln	Asn	Glu	Ala	Ser	Thr	Ser	Ala	Ala
				85					90					95	
Pro	Gly	Asn	Glu	Val	Pro	Asp	Arg	Ser	Pro	Phe	Glu	Pro	Pro	Ser	Ser
			100					105					110		
Lys	Ser	Ile	Tyr	Tyr	Gly	Gly	Glu	Asn	Met	Asn	Leu	Thr	Gly	Leu	Pro
		115					120						125		
Phe	Ser	Arg	Ile	Gln	Gln	Asp	Arg	Ala	Ala	Leu	Ala	His	Cys	Asn	Ser
	130					135					140				
Ser	Ser	Phe	Leu	Gly	Met	Ser	Cys	Gly	Thr	Gln	Ser	Ala	Ser	Leu	Glu
145					150					155					160
Pro	His	Leu	Ser	Ala	Leu	Asn	Thr	Phe	Asn	Ser	Phe	Lys	Ser	Asn	Asn
				165					170					175	

Pro	Gly	Leu	Asp	Phe	Pro	Ser	Leu	Ser	Thr	Asp	Gln	Asn	Ser	Leu	Phe
			180					185					190		
Glu	Thr	Ser	Gln	Pro	Gln	Leu	Ser	Arg	Ala	Met	Ala	Ser	Ala	Leu	Phe
		195					200					205			
Ser	Met	Pro	Met	Ala	Pro										
	210														

<210> 71

<211> 166

<212> PRT

<213> Pinus radiata

<400> 71

Met	Ala	Ala	Leu	Ala	Thr	Thr	Glu	Val	Cys	Asp	Thr	Tyr	Pro	Arg	Leu
1				5					10					15	
Val	Glu	Asn	Gly	Glu	Leu	Arg	Val	Leu	Gln	Pro	Ile	Phe	Gln	Ile	Tyr
			20					25					30		
Gly	Arg	Arg	Arg	Ala	Phe	Ser	Gly	Pro	Ile	Val	Thr	Leu	Lys	Val	Phe
			35				40					45			
Glu	Asp	Asn	Val	Leu	Leu	Arg	Glu	Phe	Leu	Glu	Glu	Arg	Gly	Asn	Gly
	50					55					60				
Arg	Val	Leu	Val	Val	Asp	Gly	Gly	Gly	Ser	Leu	Arg	Cys	Ala	Ile	Leu
65					70					75					80
Gly	Gly	Asn	Val	Val	Ser	Ala	Gln	Asn	Asn	Gly	Trp	Ser	Gly	Ile	
				85				90						95	
Ile	Val	Thr	Gly	Cys	Ile	Arg	Asp	Val	Asp	Glu	Ile	Asn	Arg	Cys	Asp
			100					105					110		
Ile	Gly	Ile	Arg	Ala	Leu	Thr	Ser	Asn	Pro	Leu	Lys	Ala	Asn	Lys	Lys
		115					120					125			
Gly	Val	Gly	Glu	Lys	His	Ala	Pro	Ile	Tyr	Ile	Ala	Gly	Thr	Arg	Ile
	130					135					140				
Leu	Pro	Gly	Glu	Trp	Cys	Tyr	Ala	Asp	Ser	Asp	Gly	Ile	Leu	Val	Ser
145					150					155					160
Gln	Gln	Glu	Leu	Ser	Leu										
				165											

<210> 72

<211> 236

<212> PRT

<213> Pinus radiata

<400> 72

Met	Leu	Val	Leu	Ile	Ile	Phe	Gly	Cys	Cys	Phe	Ile	Gly	Val	Ile	Ala
1				5					10					15	
Thr	Ser	Phe	Asp	Phe	Tyr	Tyr	Phe	Val	Gln	Gln	Trp	Pro	Gly	Ser	Tyr
			20					25					30		
Cys	Asp	Thr	Arg	Arg	Gly	Cys	Cys	Tyr	Pro	Arg	Thr	Gly	Arg	Pro	Ala
		35					40					45			
Ser	Glu	Phe	Ser	Ile	His	Gly	Leu	Trp	Pro	Asn	Tyr	Lys	Thr	Gly	Lys
	50					55					60				
Trp	Pro	Gln	Phe	Cys	Gly	Ser	Ser	Glu	Glu	Phe	Asp	Tyr	Ser	Lys	Ile
65					70					75					80
Ser	Asp	Leu	Glu	Glu	Glu	Leu	Asn	Arg	Tyr	Trp	Gly	Ser	Leu	Ser	Cys
				85				90					95		
Pro	Ser	Ser	Asp	Gly	Gln	Glu	Phe	Trp	Gly	His	Glu	Trp	Glu	Lys	His
			100					105					110		
Gly	Thr	Cys	Ser	Leu	Asn	Leu	Asp	Glu	His	Ser	Tyr	Phe	Glu	Lys	Ala

	115		120		125										
Leu	Ser	Leu	Arg	Gln	Asn	Ile	Asp	Ile	Leu	Gly	Ala	Leu	Lys	Thr	Ala
	130					135					140				
Gly	Ile	Lys	Pro	Asp	Gly	Ser	Gln	Tyr	Ser	Leu	Ser	Asp	Ile	Lys	Glu
145					150					155					160
Ala	Ile	Lys	Gln	Asn	Thr	Gly	Gln	Leu	Pro	Gly	Ile	Asp	Cys	Asn	Thr
			165						170					175	
Ser	Ala	Glu	Gly	Glu	His	Gln	Leu	Tyr	Gln	Val	Tyr	Val	Cys	Val	Asp
		180						185				190			
Lys	Ser	Asp	Ala	Ser	Thr	Val	Ile	Glu	Cys	Pro	Ile	Tyr	Pro	His	Ser
		195					200					205			
Asn	Cys	Pro	Ser	Met	Val	Val	Phe	Pro	Pro	Phe	Gly	Glu	Asp	Gln	Glu
	210					215					220				
Asp	Arg	Asp	Gly	Tyr	Thr	Glu	Gly	Met	Tyr	Glu	Leu				
225					230					235					

<210> 73

<211> 92

<212> PRT

<213> Pinus radiata

<400> 73

Met	Ala	Ala	Pro	Arg	Ser	Ser	Ala	Lys	Leu	Gly	Ala	Leu	Leu	Ala	Ile
1			5						10					15	
Leu	Leu	Ile	Val	Ala	Ala	Ala	Gln	Ala	Gln	Asp	Cys	Ser	Asn	Ala	Met
			20				25						30		
Asp	Lys	Leu	Ala	Pro	Cys	Thr	Ser	Ala	Val	Gly	Leu	Ser	Ser	Asn	Gly
		35					40					45			
Val	Lys	Pro	Ser	Ser	Glu	Cys	Cys	Asp	Ala	Leu	Lys	Gly	Thr	Ser	Thr
	50					55					60				
Gly	Cys	Val	Cys	Lys	Ser	Val	Arg	Ala	Val	Ile	Ser	Leu	Pro	Ala	Lys
65					70					75					80
Cys	Asn	Leu	Pro	Ala	Ile	Thr	Cys	Ser	Gly	Ser	Arg				
				85					90						

<210> 74

<211> 92

<212> PRT

<213> Pinus radiata

<400> 74

Met	Ala	Ala	Pro	Arg	Ser	Ser	Ala	Lys	Ser	Ala	Ala	Leu	Phe	Ala	Ile
1			5						10					15	
Leu	Leu	Ile	Val	Ala	Ala	Val	Gln	Ala	Glu	Asp	Cys	Ser	Asn	Ala	Met
			20				25						30		
Asp	Lys	Leu	Ala	Pro	Cys	Thr	Ser	Ala	Val	Gly	Leu	Ser	Ser	Asn	Gly
		35					40					45			
Val	Lys	Pro	Ser	Ser	Glu	Cys	Cys	Asp	Ala	Leu	Lys	Gly	Thr	Ser	Thr
	50					55					60				
Gly	Cys	Val	Cys	Lys	Ser	Val	Arg	Ala	Val	Ile	Ser	Leu	Pro	Ala	Lys
65					70					75					80
Cys	Asn	Leu	Pro	Ala	Leu	Thr	Cys	Ser	Gly	Ser	Arg				
				85					90						

<210> 75

<211> 92

<212> PRT

<213> Pinus radiata

<400> 75

Met	Ala	Ala	Pro	Arg	Ser	Ser	Ala	Lys	Leu	Gly	Ala	Leu	Leu	Ala	Ile
1				5					10					15	
Leu	Leu	Ile	Val	Ala	Ala	Ala	Gln	Ala	Gln	Asp	Cys	Ser	Asn	Ala	Met
			20					25					30		
Asp	Lys	Leu	Ala	Pro	Cys	Thr	Ser	Ala	Val	Gly	Leu	Ser	Ser	Asn	Gly
		35					40					45			
Val	Lys	Pro	Ser	Ser	Glu	Cys	Cys	Asp	Ala	Leu	Lys	Gly	Thr	Ser	Thr
	50					55					60				
Gly	Cys	Val	Cys	Lys	Ser	Val	Arg	Ala	Val	Ile	Ser	Leu	Pro	Ala	Lys
65					70					75					80
Cys	Asn	Leu	Pro	Ala	Ile	Thr	Cys	Ser	Gly	Ser	Arg				
				85					90						

<210> 76

<211> 125

<212> PRT

<213> Eucalyptus grandis

<400> 76

Met	Ala	Asp	Arg	Met	Leu	Thr	Arg	Ser	His	Ser	Leu	Arg	Glu	Arg	Leu
1				5					10					15	
Asp	Glu	Thr	Leu	Ser	Ala	His	Arg	Asn	Asp	Ile	Val	Ala	Phe	Leu	Ser
			20					25					30		
Arg	Val	Glu	Ala	Lys	Gly	Lys	Gly	Ile	Leu	Gln	Arg	His	Gln	Ile	Phe
		35					40					45			
Ala	Glu	Phe	Glu	Ala	Ile	Ser	Glu	Glu	Ser	Arg	Ala	Lys	Leu	Leu	Asp
	50					55					60				
Gly	Ala	Phe	Gly	Glu	Val	Leu	Lys	Ser	Thr	Gln	Glu	Ala	Ile	Val	Ser
65					70					75					80
Pro	Pro	Trp	Val	Ala	Leu	Ala	Val	Arg	Pro	Arg	Pro	Gly	Val	Trp	Glu
				85				90						95	
His	Ile	Arg	Val	Asn	Val	His	Ala	Leu	Val	Leu	Glu	Gln	Leu	Glu	Val
			100					105					110		
Ala	Glu	Tyr	Leu	His	Phe	Lys	Glu	Glu	Leu	Ala	Asp	Gly			
		115					120					125			

<210> 77

<211> 805

<212> PRT

<213> Eucalyptus grandis

<400> 77

Met	Ala	Asp	Arg	Met	Leu	Thr	Arg	Ser	His	Ser	Leu	Arg	Glu	Arg	Leu
1				5					10					15	
Asp	Glu	Thr	Leu	Ser	Ala	His	Arg	Asn	Asp	Ile	Val	Ala	Phe	Leu	Ser
			20					25					30		
Arg	Val	Glu	Ala	Lys	Gly	Lys	Gly	Ile	Leu	Gln	Arg	His	Gln	Ile	Phe
		35					40					45			
Ala	Glu	Phe	Glu	Ala	Ile	Ser	Glu	Glu	Ser	Arg	Ala	Lys	Leu	Leu	Asp
	50					55					60				
Gly	Ala	Phe	Gly	Glu	Val	Leu	Lys	Ser	Thr	Gln	Glu	Ala	Ile	Val	Ser
65					70					75					80
Pro	Pro	Trp	Val	Ala	Leu	Ala	Val	Arg	Pro	Arg	Pro	Gly	Val	Trp	Glu
				85				90						95	

His	Ile	Arg	Val	Asn	Val	His	Ala	Leu	Val	Leu	Glu	Gln	Leu	Glu	Val
			100					105					110		
Ala	Glu	Tyr	Leu	His	Phe	Lys	Glu	Glu	Leu	Ala	Asp	Gly	Ser	Leu	Asn
		115					120					125			
Gly	Asn	Phe	Val	Leu	Glu	Leu	Asp	Phe	Glu	Pro	Phe	Thr	Ala	Ser	Phe
	130					135					140				
Pro	Arg	Pro	Thr	Leu	Ser	Lys	Ser	Ile	Gly	Asn	Gly	Val	Glu	Phe	Leu
	145				150					155					160
Asn	Arg	His	Leu	Ser	Ala	Lys	Leu	Phe	His	Asp	Lys	Glu	Ser	Leu	His
			165						170					175	
Pro	Leu	Leu	Glu	Phe	Leu	Gln	Val	His	Cys	Tyr	Lys	Gly	Lys	Asn	Met
			180					185					190		
Met	Val	Asn	Ala	Arg	Ile	Gln	Asn	Val	Phe	Ser	Leu	Gln	His	Val	Leu
		195					200					205			
Arg	Lys	Ala	Glu	Glu	Tyr	Leu	Thr	Ser	Leu	Lys	Pro	Glu	Thr	Pro	Tyr
	210					215					220				
Ser	Gln	Phe	Glu	His	Lys	Phe	Gln	Glu	Ile	Gly	Leu	Glu	Arg	Gly	Trp
	225				230					235					240
Gly	Asp	Thr	Ala	Glu	Arg	Val	Leu	Glu	Met	Ile	Gln	Leu	Leu	Leu	Asp
			245						250					255	
Leu	Leu	Glu	Ala	Pro	Asp	Pro	Cys	Thr	Leu	Glu	Lys	Phe	Leu	Asp	Arg
			260					265					270		
Val	Pro	Met	Val	Phe	Asn	Val	Val	Ile	Met	Ser	Pro	His	Gly	Tyr	Phe
		275					280					285			
Ala	Gln	Asp	Asp	Val	Leu	Gly	Tyr	Pro	Asp	Thr	Gly	Gly	Gln	Val	Val
	290					295					300				
Tyr	Ile	Leu	Asp	Gln	Val	Arg	Ala	Leu	Glu	Glu	Glu	Met	Leu	His	Arg
	305				310					315					320
Ile	Lys	Gln	Gln	Gly	Leu	Asp	Ile	Thr	Pro	Arg	Ile	Leu	Ile	Ile	Thr
			325						330					335	
Arg	Leu	Leu	Pro	Asp	Ala	Val	Gly	Thr	Thr	Cys	Gly	Gln	Arg	Leu	Glu
			340					345					350		
Lys	Val	Phe	Gly	Thr	Glu	Tyr	Ser	His	Ile	Leu	Arg	Val	Pro	Phe	Arg
		355					360					365			
Asn	Glu	Lys	Gly	Val	Val	Arg	Lys	Trp	Ile	Ser	Arg	Phe	Glu	Val	Trp
	370					375					380				
Pro	Tyr	Leu	Glu	Arg	Tyr	Thr	Glu	Asp	Val	Ala	Ser	Glu	Leu	Ala	Gly
	385				390					395					400
Glu	Leu	Gln	Gly	Lys	Pro	Asp	Leu	Ile	Ile	Gly	Asn	Tyr	Ser	Asp	Gly
			405						410					415	
Asn	Ile	Val	Ala	Ser	Leu	Leu	Ala	His	Lys	Leu	Gly	Val	Thr	Gln	Cys
		420						425					430		
Thr	Ile	Ala	His	Ala	Leu	Glu	Lys	Thr	Lys	Tyr	Pro	Glu	Ser	Asp	Ile
		435					440					445			
Tyr	Trp	Lys	Lys	Phe	Glu	Glu	Lys	Tyr	His	Phe	Ser	Cys	Gln	Phe	Thr
	450					455					460				
Ala	Asp	Leu	Ile	Ala	Met	Asn	His	Thr	Asp	Phe	Ile	Ile	Thr	Ser	Thr
	465				470					475					480
Phe	Gln	Glu	Ile	Ala	Gly	Ser	Lys	Asp	Thr	Val	Gly	Gln	Tyr	Glu	Ser
			485						490					495	
His	Met	Asn	Phe	Thr	Leu	Pro	Gly	Leu	Tyr	Arg	Val	Val	His	Gly	Ile
			500					505					510		
Asp	Val	Phe	Asp	Pro	Lys	Phe	Asn	Ile	Val	Ser	Pro	Gly	Ala	Asp	Met
		515					520					525			
Ser	Ile	Tyr	Phe	Ala	Tyr	Thr	Glu	Gln	Glu	Arg	Arg	Leu	Lys	Ser	Phe
	530					535					540				
His	Pro	Glu	Ile	Glu	Glu	Leu	Leu	Phe	Ser	Asp	Val	Glu	Asn	Lys	Glu

545		550		555		560									
His	Leu	Cys	Val	Leu	Lys	Asp	Lys	Lys	Lys	Pro	Ile	Ile	Phe	Thr	Met
		565		570		575									
Ala	Arg	Leu	Asp	Arg	Val	Lys	Asn	Leu	Thr	Gly	Leu	Val	Glu	Trp	Tyr
		580		585		590									
Gly	Lys	Asn	Ser	Lys	Leu	Arg	Glu	Leu	Ala	Asn	Leu	Val	Val	Val	Gly
		595		600		605									
Gly	Asp	Arg	Arg	Lys	Asp	Ser	Lys	Asp	Leu	Glu	Glu	Gln	Ser	Glu	Met
		610		615		620									
Lys	Lys	Met	Tyr	Asp	Leu	Ile	Glu	Lys	Tyr	Lys	Leu	Asn	Gly	Gln	Phe
		625		630		635									
Arg	Trp	Ile	Ser	Ser	Gln	Met	Asn	Arg	Val	Arg	Asn	Gly	Glu	Leu	Tyr
		645		650		655									
Arg	Tyr	Ile	Cys	Asp	Thr	Lys	Gly	Val	Phe	Val	Gln	Pro	Ala	Ile	Tyr
		660		665		670									
Glu	Ala	Phe	Gly	Leu	Thr	Val	Val	Glu	Ala	Met	Thr	Cys	Gly	Leu	Pro
		675		680		685									
Thr	Phe	Ala	Thr	Cys	Asn	Gly	Gly	Pro	Ala	Glu	Ile	Ile	Val	His	Gly
		690		695		700									
Lys	Ser	Gly	Tyr	His	Ile	Asp	Pro	Tyr	His	Gly	Asp	Gln	Ala	Ala	Glu
		705		710		715									
Leu	Leu	Val	Asp	Phe	Phe	Asn	Lys	Cys	Lys	Ile	Asp	Gln	Ser	His	Trp
		725		730		735									
Asp	Glu	Ile	Ser	Lys	Gly	Ala	Met	Gln	Arg	Ile	Glu	Glu	Lys	Tyr	Thr
		740		745		750									
Trp	Lys	Ile	Tyr	Ser	Glu	Arg	Leu	Leu	Asn	Leu	Thr	Ala	Val	Tyr	Gly
		755		760		765									
Phe	Trp	Lys	His	Val	Thr	Asn	Leu	Asp	Arg	Arg	Glu	Ser	Arg	Arg	Tyr
		770		775		780									
Leu	Glu	Met	Phe	Tyr	Ala	Leu	Lys	Tyr	Arg	Pro	Leu	Ala	Gln	Ser	Val
		785		790		795									
Pro	Pro	Ala	Val	Glu											
				805											

<210> 78  
 <211> 264  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 78
Met Gly Ser Thr Gly Ser Glu Thr Gln Met Thr Pro Thr Gln Val Ser
1 5 10 15
Asp Glu Glu Ala Asn Leu Phe Ala Met Gln Leu Ala Ser Ala Ser Val
20 25 30
Leu Pro Met Val Leu Lys Ala Ala Ile Glu Leu Asp Leu Glu Ile
35 40 45
Met Ala Lys Ala Gly Pro Gly Ala Phe Leu Ser Pro Gly Glu Val Ala
50 55 60
Ala Gln Leu Pro Thr Gln Asn Pro Glu Ala Pro Val Met Leu Asp Arg
65 70 75 80
Ile Phe Arg Leu Leu Ala Ser Tyr Ser Val Leu Thr Cys Thr Leu Arg
85 90 95
Asp Leu Pro Asp Gly Lys Val Glu Arg Leu Tyr Gly Leu Ala Pro Val
100 105 110
Cys Lys Phe Leu Val Lys Asn Glu Asp Gly Val Ser Ile Ala Ala Leu
115 120 125
Asn Leu Met Asn Gln Asp Lys Ile Leu Met Glu Ser Trp Tyr Tyr Leu



130		135		140
Lys Asp Ala Val Leu Glu Gly Gly Ile Pro Phe Asn Lys Ala Tyr Gly				
145		150		155
Met Thr Ala Phe Glu Tyr His Gly Thr Asp Pro Arg Phe Asn Lys Ile				160
	165		170	
Phe Asn Arg Gly Met Ser Asp His Ser Thr Ile Thr Met Lys Lys Ile				175
	180		185	
Leu Glu Thr Tyr Lys Gly Phe Glu Gly Leu Glu Thr Val Val Asp Val				190
	195		200	
Gly Gly Gly Thr Gly Ala Val Leu Ser Met Ile Val Ala Lys Tyr Pro				205
	210		215	
Ser Met Lys Gly Ile Asn Phe Asp Arg Pro Asn Gly Leu Lys Thr Pro				220
225		230		235
His Pro Phe Leu Val Ser Ser Thr Ser Glu Ala Thr Cys Ser Ser Ala				240
	245		250	
Phe Gln Arg Glu Met Pro Phe Ser				255
	260			

<210> 79  
 <211> 136  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 79
Met Gly Lys Glu Lys Ile His Ile Ser Ile Val Val Ile Gly His Val
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Asp Ser Gly Lys Ser Thr Thr Thr Gly His Leu Ile Tyr Lys Leu Gly
20 25 30
Gly Ile Asp Lys Arg Val Ile Glu Arg Phe Glu Lys Glu Ala Ala Glu
35 40 45
Met Asn Lys Arg Ser Phe Lys Tyr Ala Trp Val Leu Asp Lys Leu Lys
50 55 60
Ala Glu Arg Glu Arg Gly Ile Thr Ile Asp Ile Ala Leu Trp Lys Phe
65 70 75 80
Glu Thr Thr Lys Tyr Tyr Cys Thr Val Ile Asp Ala Pro Gly His Arg
85 90 95
Asp Phe Ile Lys Asn Met Ile Thr Gly Thr Ser Gln Ala Asp Cys Ala
100 105 110
Val Leu Ile Ile Asp Ser Thr Thr Gly Gly Phe Glu Ala Gly Ile Ser
115 120 125
Lys Asp Gly Gln Thr Arg Glu His
130 135

<210> 80  
 <211> 229  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 80
Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
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Val Glu Ser Ser Asp Thr Ile Asp Asn Val Lys Ala Lys Ile Gln Asp
20 25 30
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45
Gln Leu Glu Asp Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu
50 55 60

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Met Gln Ile Phe  
 65 70 75 80  
 Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser  
 85 90 95  
 Asp Thr Ile Asp Asn Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile  
 100 105 110  
 Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp  
 115 120 125  
 Gly Arg Thr Leu Ala Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His  
 130 135 140  
 Leu Val Leu Arg Leu Arg Gly Gly Met Gln Ile Phe Val Lys Thr Leu  
 145 150 155 160  
 Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Ser Ser Asp Thr Ile Asp  
 165 170 175  
 Asn Val Lys Ala Lys Ile Gln Asp Lys Glu Gly Ile Pro Pro Asp Gln  
 180 185 190  
 Gln Arg Leu Ile Phe Ala Gly Lys Gln Leu Glu Asp Gly Arg Thr Leu  
 195 200 205  
 Ala Asp Tyr Asn Ile Gln Lys Glu Ser Thr Leu His Leu Val Leu Arg  
 210 215 220  
 Leu Arg Gly Gly Phe  
 225

<210> 81  
 <211> 345  
 <212> DNA  
 <213> *Eucalyptus grandis*

<400> 81  
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 tataaacctt gaaagttaat gctactaaat tggtatatat atattaggca aattacaacc 180  
 ttaatgcaac agttaatgac gtgatactgt tcagattata gatacaatgg ttatccttga 240  
 atgaataaga agaagtccta agggcaagtg ctatgagctt gcacgactgc ttttgcgcca 300  
 tttttgttta ccagcccggg ccgtcgacca cgcgtgccct atagt 345

<210> 82  
 <211> 72  
 <212> DNA  
 <213> *Eucalyptus grandis*

<400> 82  
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 accgcgtggg cc 72

<210> 83  
 <211> 544  
 <212> DNA  
 <213> *Eucalyptus grandis*

<400> 83  
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 tatccaggag cgtttgtaca ctgggagtag agagcttctt gcgataccga aactaccctt 180  
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 cccaagccc aggcccaaatt gcctgttcct tgtggccctg ccaacattcc ctttgaaatt 360

aaaaaattaa	aaaaaaaactc	tctgccaggc	aaaagtaaag	attaacacca	ccaaaattta	420
taacaaatth	atcattcatt	aatttttcgt	aaattttatt	ttcaaattac	tgagtcgaat	480
tacatgtata	aattcacgga	tgtatcgggt	cgagatttta	tcctctaatt	atcattagt	540
tatg						544

<210> 84

<211> 515

<212> DNA

<213> Eucalyptus grandis

<400> 84

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atttaccaca	tcagagacaa	aacaatgtct	ttttttgtatt	ttctagtcac	gtcaacatgc	180
aaaacaacgc	catttttgac	tcaccttgcc	ggaaaattgc	cacgtcaaca	atttggctag	240
agtggcgctt	aagtgatcta	ttttgtctca	attttggcac	ttaaagtgtca	ttttcctaaa	300
tttttagcact	taaagtattc	ctctatgtca	agttttgaca	cttgggggtgt	actttgtcca	360
atcataaacc	gtataagttc	acttttaaca	aaaatggcgc	aaaagcagtc	gtgcaagctc	420
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<210> 85

<211> 515

<212> DNA

<213> Eucalyptus grandis

<400> 85

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tatccaggag	cgttttgtaca	ctgggagtag	agagcttctt	gcgataccga	aactaccctt	180
ggacgactgg	ccttttttgcc	tcgtgcccc	tctctgagcc	ggggcgcaat	ttgtcccttt	240
cccagagcga	agtgtcgatt	ttgtccttcc	acgaggcttt	acctactccc	atcgcccgag	300
ccccaaagccc	aggcccaaat	gcctgttctt	tgtggccctg	ccaacattcc	ctttgaaatt	360
aaaaaattaa	aaaaaaaactc	tctgccaggc	aaaagtaaag	attaacacca	ccaaaattta	420
taacaaatth	atcattcatt	aatttttcgt	aaattttatt	ttcaaattac	tgagtcgaat	480
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<210> 86

<211> 782

<212> DNA

<213> Eucalyptus grandis

<400> 86

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gatgtgaaca	agaagctgag	tgctgcaatt	gcttcaatcc	tcgaaaccaa	gctgtccatc	360
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ct						782

<210> 87  
 <211> 115  
 <212> PRT  
 <213> Eucalyptus grandis

<400> 87  
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 Gly Lys Pro Glu Ala Tyr Val Met Ile Val Leu Lys Gly Ser Val Pro  
 35 40 45  
 Met Ala Phe Gly Gly Thr Glu Gln Pro Ala Ala Tyr Gly Glu Leu Val  
 50 55 60  
 Ser Ile Gly Gly Leu Asn Pro Asp Val Asn Lys Lys Leu Ser Ala Ala  
 65 70 75 80  
 Ile Ala Ser Ile Leu Glu Thr Lys Leu Ser Ile Pro Lys Ser Arg Phe  
 85 90 95  
 Phe Leu Lys Phe Tyr Asp Thr Lys Gly Ser Phe Phe Gly Trp Asn Gly  
 100 105 110  
 Ser Thr Phe  
 115

<210> 88  
 <211> 1521  
 <212> DNA  
 <213> Pinus radiata

<400> 88  
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 aatttgatcg agaaggatgt ctgcatcgaa cggaactaat ggtgttgctg cagtcaagtc 1200  
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 ccccgctctc cgccagaagc tcgaaaggct ttgcaagacg acgacggtga agacgcgata 1380  
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 caccgtccga cagcgactcg agatctcgaa cgtggccgtg accgacatgg cggtggacgc 1500  
 gtgccgtgac tgcctcaaag a 1521

<210> 89  
 <211> 2590  
 <212> DNA  
 <213> Eucalyptus grandis

<400> 89  
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 agctttgtgt tggatggctt tgacctctct caccctaaaa ggtagctcaa aagaatgaga 180  
 ctttccgtca tacttataaa ccgaccacca gcctccttca caaccgacat gggacaacct 240  
 caaatagaat ttttaacaac acccttgac gctcttttcta tccactttat tatgccatca 300  
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 aaaaagggtcc tacctttgac tcccccgcg tcccaaattc tcaactccga ccggtaacgg 420  
 agctcacaag tttcagcctt tcatcatcat cactcgaagg cagagagaag gacatacact 480  
 aaagacaacg aaacagtctc tccatcccg catccgacac gatccacatt acggtacgga 540  
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 ccggcgacgg cgacggcgac gaaggcgggg aggggaatgc cgcgggggtt ctgcaacgac 780  
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<210> 90  
 <211> 1172  
 <212> DNA  
 <213> Eucalyptus grandis

<400> 90

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aaaggttgcc	gaaggtccgg	tgacctcagc	tgacggccac	ctacaccaa	tctagctcac	180
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<210> 91

<211> 446

<212> DNA

<213> *Eucalyptus grandis*

<400> 91

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<210> 92

<211> 2119

<212> DNA

<213> *Pinus radiata*

<400> 92

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<210> 93

<211> 2571

<212> DNA

<213> *Eucalyptus grandis*

<400> 93

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<211> 1406

<212> DNA

<213> Pinus radiata

<400> 94

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<210> 95

<211> 2546

<212> DNA

<213> Pinus radiata

<400> 95

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<210> 96

<211> 4726

<212> DNA

<213> Pinus radiata

<400> 96

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<210> 97

<211> 635

<212> DNA

<213> Pinus radiata

<400> 97

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<210> 98

<211> 468

<212> DNA

<213> Pinus radiata

<400> 98

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tttcttattt	tttttatgaa	ccgtcggatt	cgagatcgga	cggcgatccg	aaactgcaag	180
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tgcttgggtg	gtggagggtc	tatggccagt	atatgttgat	aacaaggag	aggaagtagt	300
cctcttcac	tagtgcgagt	ctctctgctt	ttctacgccg	ctgcgaagct	gttctgtggt	360
gtttctgatt	ctccagactc	aggcagtcgt	ttttgtaaga	gaatttagtt	catcatggga	420
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<210> 99

<211> 222

<212> DNA

<213> Pinus radiata

<400> 99

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cgtcggccgt	cggatgcagc	atcggacggc	aaagaaggaa	ccctaaaacg	cattgcaacg	180
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<210> 100  
 <211> 597  
 <212> DNA  
 <213> Pinus radiata

<400> 100  
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 tcttggtcac atcggagtct gtaaagtagg gacaccaga caaactctgt gaccagattt 480  
 ctgatgcagt gttggatgca tgcctcacc aggacccga cagcaaggta gcatgcgaga 540  
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<210> 101  
 <211> 669  
 <212> DNA  
 <213> Pinus radiata

<400> 101  
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 gtgaccagat ttctgatgca gtgttggtg catgcctcac ccaggacccc gacagcaagg 600  
 tagcatgcga gacttgcaat aaaacgaaca tggatcatgg ttttggtgaa atcaccacca 660  
 aggccgatg 669

<210> 102  
 <211> 230  
 <212> DNA  
 <213> Pinus radiata

<400> 102  
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 tggtagcatt agcgattccc ttcaccaaag gaaccctttg ctggtgatga gtggacaacc 180  
 taaagtgtgt tgctggtgat gagtggacaa ccagagtggg ggttggggaa 230

<210> 103  
 <211> 596  
 <212> DNA  
 <213> Eucalyptus grandis

<400> 103  
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 gtcgtcggcg ccttcttctt tacagattgt atcctcccat taaccgctg gacctgcact 180  
 gtaacccga aacggtgggg gccaatctc tctttccgcc tcctccactc agcttcgtgg 240

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gaattgaacg	agctcaatcc	gcgtatttaa	acccgccccg	cttcctcatt	cttccttgtc	480
catttcaact	ctccctctct	ccctctcttc	tgccccctga	tcgatccagc	gatcttccta	540
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<210> 104

<211> 653

<212> DNA

<213> Eucalyptus grandis

<400> 104

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tcggcgaccc	tcaccaatgc	tggggcgagg	gtgagcaacc	ctcatccaaa	tctggagagg	180
gttgtcactc	gagaaagggg	cactggccct	cccctaaccg	ctactaacat	cgttggcctt	240
cgtcaccacc	gcactaacia	tgggccaacta	attttatatt	tttcgtgata	ttaatcctat	300
taaaaatgaa	aatatctcct	taatttaatta	agcttggtcag	gaccgatgta	aacaaaatta	360
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ctttccttcc	ttcctttctc	accagatttt	cccagaaaaa	tcacagagag	agaaagaaaa	600
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<210> 105

<211> 342

<212> DNA

<213> Eucalyptus grandis

<400> 105

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aagaccctag	ccaaatcatt	ccaagtcca	agttatgtga	cactgcgact	aacaaggcaa	300
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<210> 106

<211> 342

<212> DNA

<213> Eucalyptus grandis

<400> 106

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<210> 107

<211> 948

<212> DNA

<213> Eucalyptus grandis

<400> 107

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<210> 108

<211> 362

<212> DNA

<213> *Eucalyptus grandis*

<400> 108

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aaacacttgc	tcagacacca	tcaaatcctt	cgaaaagtct	ttttcttaca	aaaaacaaac	300
gaaagcaacc	atgaagcacc	agttcattgt	tctgggtctc	ttattcctca	tcaacacagc	360
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<210> 109

<211> 326

<212> DNA

<213> *Eucalyptus grandis*

<400> 109

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taaaagaggg	ttacaaatag	atgtctcaaa	caattaccaa	gcgggttagat	tgactccact	120
attttgacgg	ttctcttgac	tttactatct	caacgattac	tttatttcat	catgttgacg	180
gttgcatcca	tgattgttga	cttcactttt	tgtcgattcc	ttcaagctgc	tgattcttca	240
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<210> 110

<211> 296

<212> DNA

<213> *Pinus radiata*

<400> 110

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aattacaaca	aaaactcaca	gcatttgaag	gaagttggag	tggttagagt	agaaatacac	180
agcctaattct	gaaggaagtt	cgagtaatat	agtggagaaat	ggatcttctt	ctcctcatga	240
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<210> 111

<211> 723  
 <212> DNA  
 <213> *Pinus radiata*

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<210> 112  
 <211> 1301  
 <212> DNA  
 <213> *Pinus radiata*

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<210> 113  
 <211> 3070  
 <212> DNA  
 <213> *Eucalyptus grandis*

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<210> 114

<211> 1227

<212> DNA

<213> Pinus radiata

<400> 114

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60



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<210> 115

<211> 1169

<212> DNA

<213> Eucalyptus grandis

<400> 115

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<210> 116

<211> 947

<212> DNA

<213> Eucalyptus grandis

<400> 116

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<210> 117

<211> 1766

<212> DNA

<213> *Eucalyptus grandis*

<400> 117

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<210> 118

<211> 1928

<212> DNA

<213> *Eucalyptus grandis*

<400> 118

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<210> 119

<211> 602

<212> DNA

<213> *Eucalyptus grandis*

<400> 119

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<210> 120

<211> 1326

<212> DNA

<213> *Pinus radiata*

<400> 120

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<210> 125

<211> 1489

<212> DNA

<213> Eucalyptus grandis

<400> 125

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 <211> 1273  
 <212> DNA  
 <213> Eucalyptus grandis

<400> 126

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<210> 127  
 <211> 3720  
 <212> DNA  
 <213> Eucalyptus grandis

<400> 127

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